WHAT IS CLAIMED IS:

1.- A composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte comprising:

a) at least one polyorganosiloxane (POS) (A) exhibiting, per molecule, at least two C_2-C_6 alkenyl groups bonded to silicon and at least one group directly bonded to a silicon atom comprising a polyoxyalkylene (Poa) ether functional group;

b) at least one polyorganosiloxane (POS) (B) exhibiting, per molecule, at least two hydrogen atoms bonded to silicon;

c) a catalytically effective amount of at least one hydrosilylation catalyst (C); and

d) at least one electrolyte salt (D).

2.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 1, characterized in that the proportions of the POS (A) and of the POS (B) are such that the ratio of the number of the hydrogen atoms bonded to silicon in the POS (B) to the number of alkenyl radicals contributed by the POS (A) is between 0.4 and 10.

3.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in either of the preceding claims, characterized in that the polyoxyalkylene (Poa) ether functional group of the (POS) (A) is of polyoxyethylene ether and/or polyoxypropylene ether type.

4.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of the preceding claims, characterized in that the POS (A) is a polyfunctional POS comprising:

a) per molecule, at least two alkenyl functional groups;

b) at least two identical or different units of formula (I):

$$(R)_a Y_b X_c SiO_{\frac{4-(a+b+c)}{2}} \qquad (I)$$

in which:

- the R symbols, which are identical or different, each represent a monovalent hydrocarbon group chosen from a linear or branched alkyl radical having from 1 to 6 carbon atoms, a cycloalkyl radical having from 5 to 8 carbon atoms, an alkoxyl radical and a phenyl radical;
- the Y symbols, which are identical or different, each represent an R^1-Poa

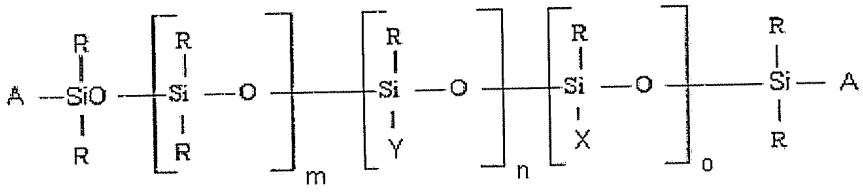
group where the R^1 symbol represents a radical comprising from 2 to 50 carbon atoms and the Poa symbol represents a group of polyoxyalkylene ether type, preferably of polyoxyethylene ether and/or polyoxypropylene ether type;

- the X symbols, which are identical or different, each represent a C_2-C_6 alkenyl functional group bonded to silicon, preferably vinyl or allyl;
- the symbols a and b are identical or different numbers chosen from the values 0, 1, 2 or 3;
- the c symbol is 0 or 1; and
- the sum a + b + c being other than zero and ≤ 3; and

c) optionally at least one siloxyl unit of formula $R_kSiO_{(4-k)/2}$, the R symbol having the same definition as above and k being a number between 1 and 3.

5.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 4, characterized in that the (-R^1-Poa) groups are chosen from the following groups:
$-(CH_2)_3-O-(CH_2CH_2-O)_m-CH_3$; $-(CH_2)_2-O-(CH_2CH_2-O)_m-CH_3$;
$-(CH_2)_3-O-(CH(CH_3)-CH_2-O)_m-CH_3$ and $-(CH_2)_2-O-(CH(CH_3)-CH_2-O)_m-CH_3$
with m ≤14.

6.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of the preceding claims, characterized in that the POS (A) is an essentially linear random or block copolymer with the following mean general formula (II):



which can optionally comprise units of formula $RSiO_{3/2}$ (T), in which formula:

- the R symbols, which are identical or different, each represent a monovalent hydrocarbon group chosen from a linear or branched alkyl radical having from 1 to 6 carbon atoms, a cycloalkyl radical having from 5 to 8 carbon atoms, an alkoxyl radical and a phenyl radical;
- the Y symbols, which are identical or different, each represent an R^1-Poa group where the R^1 symbol represents a radical comprising from 2 to 50 carbon atoms and the Poa symbol represents a group of polyoxyalkylene ether type, preferably polyoxyethylene and/or polyoxypropylene ether type;

- the X symbols, which are identical or different, each represent a C_2-C_6 alkenyl functional group bonded to silicon, preferably vinyl or allyl;
- the A symbols, which are identical or different, each represent an R symbol, an X symbol or a Y symbol, the said symbols having the same definitions as above;
- m is an integer or fractional number greater than or equal to 0;
- n is an integer or fractional number greater than or equal to 1; and
- o is an integer or fractional number greater than or equal to 2.

7.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 6, characterized in that:

- m is an integer or fractional number greater than or equal to 0 and less than or equal to 200;
- n is an integer or fractional number greater than or equal to 1 and less than or equal to 200; and
- o is an integer or fractional number greater than or equal to 2 and less than or equal to 200.

8.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in either of claims 6 and 7, characterized in that the number of units carrying the alkenyl functional group X is chosen so that the alkenyl functional groups X represent a content, expressed as % with respect to the total weight of the POS (A), of between 0.5 and 5%.

9.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of claims 1 to 5, characterized in that the POS (B) comprises:

a) at least two identical or different units of formula (III)

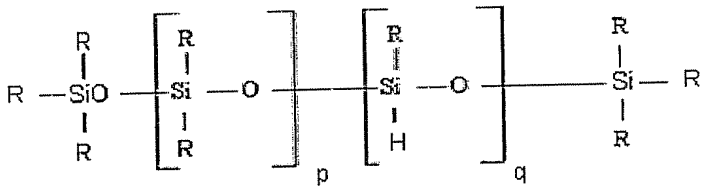
$$R_x H SiO_{\frac{4-x}{2}} \qquad (III)$$

in which formula:

- the R symbols, which are identical or different, each represent a monovalent hydrocarbon group chosen from a linear or branched alkyl radical having from 1 to 6 carbon atoms, a cycloalkyl radical having from 5 to 8 carbon atoms and a phenyl radical; and
- x is a number between 1 and 3 inclusive; and

b) optionally at least one siloxyl unit of formula $R_kSiO_{(4-k)/2}$, the R symbol having the same definition as above and k being a number between 1 and 3.

10.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claims 1 to 5 or 9, characterized in that the POS (B) is an essentially linear random or block copolymer with the following mean general formula (IV):



in which formula:

- the R symbols, which are identical or different, each represent a hydrogen, a monovalent hydrocarbon group chosen from a linear or branched alkyl radical having from 1 to 6 carbon atoms, a cycloalkyl radical having from 5 to 8 carbon atoms and a phenyl radical;
- p is an integer or fractional number greater than or equal to 0; and
- q is an integer or fractional number greater than or equal to 2 which can optionally be equal to 0, with the condition that, when q=0, then the two end M groups carry a hydrogen directly bonded to the silicon atom.

11.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of the preceding claims, characterized in that the electrolyte salt (D) is composed:

- of a cation chosen from the group consisting of the following entities: metal cations, ammonium ions, amidinium ions and guanidinium ions; and;
- of an anion chosen from the group consisting of the following entities: chloride ions, bromide ions, iodide ions, perchlorate ions, thiocyanate ions, tetrafluoroborate ions, nitrate ions, AsF_6^-, PF_6^-, stearylsulfonate ions, trifluoromethanesulfonate ions, octylsulfonate ions, dodecylbenzene-sulfonate ions, $R^4SO_3^-$, $(R^4SO_2)(R^5SO_2)N^-$ and $(R^4SO_2)(R^5SO_2)(R^6SO_2)C^-$; in each formula, the R^4, R^5 and R^6 radicals are identical or different and represent electron-withdrawing groups.

12.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 11, characterized in that

the R^4, R^5 and R^6 radicals are electron-withdrawing groups of perfluoroaryl or perfluoroalkyl type, the perfluoroalkyl group comprising from 1 to 6 carbon atoms.

13.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 11, characterized in that the electrolyte salt (D) comprises a metal cation chosen from alkali metals and alkaline earth metals of Groups 1 and 2 of the Periodic Table [Chem. & Eng. News, vol. 63, No. 5, 26, of February 4, 1985].

14.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 13, characterized in that the electrolyte salt (D) comprises a metal cation of lithium type.

15.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 14, characterized in that the amount of the electrolyte salt (D) is determined so that the O/Li molar ratio is between 15 and 40 and preferably equal to 25.

16.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of claims 1, 14 and 15, characterized in that the electrolyte salt (D) is chosen from the group consisting of the following compounds:
$LiClO_4$, $LiBF_4$, $LiPF_6$, $LiAsF_6$, $LiCF_3SO_3$, $LiN(CF_3SO_2)_2$, $Li(C_2F_5SO_2)_2$ and a mixture of these compounds.

17.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 11, characterized in that the metal cation is chosen from transition metals.

18.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 17, characterized in that the metal cation is chosen from the group consisting of manganese, iron, cobalt, nickel, copper, zinc, calcium and silver.

19.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of the preceding claims, characterized in that it comprises an organic electrolyte (E).

20.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in claim 19, characterized in that the organic electrolyte (E) is chosen from the group consisting of the following compounds:
propylene carbonate, ethylene carbonate, diethyl carbonate, dimethyl carbonate, ethyl methyl carbonate, γ-butyrolactone, 1,3-dioxolane, dimethoxyethane, tetrahydrofuran, dimethyl sulfoxide and polyethylene glycol dimethyl ether.

21.- The composition which can be polymerized and/or crosslinked by polyaddition for a battery electrolyte as claimed in one of the preceding claims, characterized in that the hydrosilylation catalyst (C) is based on platinum.

22.- A polymer electrolyte for a battery obtained by polymerization and/or crosslinking by the polyaddition route, which polyaddition is optionally thermally activated, of a polymerizable and/or crosslinkable composition as claimed in one of claims 1 to 21.

23.- A polymer battery comprising a polymer electrolyte as claimed in claim 22 positioned between an anode and a cathode.

24.- The polymer battery as claimed in claim 23, characterized in that at least one of the constituents of the cathode is chosen from the group consisting of the following compounds:
lithium metal, lithium alloys, inorganic materials comprising lithium insertions and carbonate materials comprising lithium insertions.

25.- Use of a polymer battery as claimed in claim 23 or 24 in a geostationary satellite or a hybrid electric vehicle.